GRANT & HACKH'S

CHEMICAL DICTIONARY

[*American, International, European and British Usage*]

Containing the Words Generally Used in Chemistry, and Many of the Terms Used in the Related Sciences of Physics, Medicine, Engineering, Biology, Pharmacy, Astrophysics, Agriculture, Mineralogy, etc.

Based on Recent Scientific Literature

FIFTH EDITION

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McGRAW-HILL BOOK COMPANY

New York St. Louis San Francisco Auckland Bogotá
Hamburg London Madrid Mexico
Milan Montreal New Delhi Panama
Paris São Paulo Singapore
Sydney Tokyo Toronto

Library of Congress Cataloging-in-Publication Data

Hackh, Ingo W. D. (Ingo Waldemar Dagobert), 1890–1938.
Grant & Hackh's chemical dictionary.

Rev. ed. of: Chemical dictionary. 4th ed. 1969.
1. Chemistry—Dictionaries. I. Grant, Roger L.
II. Grant, Claire. III. Title. IV. Title: Grant &
Hackh's chemical dictionary. V. Title: Chemical
dictionary.
QD5.H3 1987 540'.3 86-7496
ISBN 0-07-024067-1

234567890 DOCDOC 943210

ISBN 0-07-024067-1

The previous edition of this book was *Hackh's Chemical Dictionary*, 4th ed., published by McGraw-Hill in 1969. It was prepared by Dr. Julius Grant from a *Chemical Dictionary* compiled by Ingo W. D. Hackh. The current, or 5th, edition of this book was prepared by Dr. Roger L. Grant, whose father prepared the 4th edition.

The editors for this book were Betty J. Sun and Susan Thomas, the designer was Naomi Auerbach, and the production supervisor was Teresa F. Leaden. It was set in Palatino by University Graphics, Inc.

Printed and bound by R. R. Donnelley & Sons Company.

A hydrocarbon from coal tar distillates. Colorless needles, m.95, insoluble in water; used in organic synthesis. **bi ~** Biacene. **1,2-dioxo ~** Acenaphthenequinone.

a. dione Acenaphthenequinone.

acenaphthenequinone $C_{12}H_6O_2$ = 182.2. Dioxoacenaphthene. Colorless crystals, m.261, soluble in alcohol.

acenaphthenone $C_{12}H_8O$ = 168.2. Colorless crystals, m.121, soluble in alcohol.

acenaphthenyl• The radical $C_{12}H_9$—, from acenaphthene.

acenaphthylene• $C_{12}H_8$ = 152.2. An unsaturated hydrocarbon from acenaphthene. Colorless crystals, m.92, insoluble in water. **1,2-dihydro ~** Acenaphthene.

-acene Suffix indicating 5 or more fused benzene rings in a linear configuration.

Acer A genus of broad-leaved deciduous trees commonly known as the maples. **A. saccharum** Sugar maple.

acerdese Manganite.

acerdol Calcium permanganate.

aceric acid Impure malic acid from the sap of the maple *(Acer rubrum).*

aceritol See *acertannin.*

aceroides gum Misnomer for *acaroid resin.*

acertannin $C_{20}H_{20}O_{13}(+2 \text{ or } 4H_2O)$ = 468.4. A *pyrogallol tannin,* q.v. Hydrolysis by tannase produces gallic acid and aceritol.

acesulfame potassium 6-Methyl-1,2,3-oxathiozane-4-one-2,2-dioxide. A sweetener, 200 times as sweet as sucrose.

acet (1) Indicating the group MeC≡; as in the acetyl radical, MeCO—. (2) The acetyl• radical.

acetal $MeCH(OEt)_2$ = 118.2. 1,1-Diéthoxyethane•, diethylacetal. Colorless liquid, d.0.831, b.103, slightly soluble in water; solvent and intermediate in chemical synthesis. Cf. *acetals.* **amino ~** See *aminoacetal.* **dichloro ~** See *dichloroacetal.* **trichloro ~** See *trichloroacetal.*

a. diethyl Acetal.

acetaldehyde• $CH_3 \cdot CHO$ = 44.1. Ethanal•, aldehyde, ethyl aldehyde, acetic aldehyde. Colorless aromatic liquid, b.20.8, soluble in water, alcohol, or ether. Used as a solvent and reducing agent (silvering mirrors), and in the manufacture of organic compounds. **amino ~ •** $H_2N \cdot CH_2 \cdot CHO$ = 59.1. Glycine aldehyde. Readily polymerizes. Stable in conc. acid solutions. **benzoyl ~** See *Benzoylacetaldehyde•.* **benzylidene ~** Cinnamaldehyde•. **hydroxy ~ •** Glycolaldehyde•: **met(a) ~** Metaldehyde. **oxo ~** Pyruvaldehyde•. ***para-* ~** Paraldehyde. **pentyl ~** Hexanal•. **phenyl ~ •** α-Tolualdehyde. **tribromo ~** Bromal. **trichloro ~** Chloral. **trimethyl ~** Pivaldehyde•.

a. ammonia $CH_3 \cdot CHOH \cdot NH_2$ = 61.1. 1-Aminoethanol•. Addition compound of aldehyde and ammonia. Solid, m.97; soluble in water. **a. cyanohydrin** $CH_3 \cdot CHOH \cdot CN$ = 71.1. Liquid, b.183 (decomp.), soluble in water. **a. semicarbazone** $Me \cdot CH{:}N \cdot NHCONH_2$ = 101.1. Solid, m.162.

acetaldol Aldol.

acetaldoxime Aldoxime.

acetaldoxine $Me \cdot CHNO$ = 58.1. Colorless crystals or liquid, d.0.9645, m.13, b.114, soluble in alcohol.

acetalphenaphthylamine Acetnaphthalide.

acetals• Compounds containing the group $=C(OR)_2$. **hemi ~** Compounds containing the group $=C(OH)OR$, as glucose. **ketone ~** Acetals•, ketals.

acetamide• $Me \cdot CO \cdot NH_2$ = 59.1. Ethanamide. Colorless crystals, m.82, soluble in water; used in organic synthesis. **acetyl ~** Diacetamide•. **benzyl ~ α- ~** Hydrocinnamamide. ***N-* ~** Benzylacetamide. **benzylidene ~** Cinnamamide. **bromo ~** Acetbromamide. **cyan ~** $CN \cdot CH_2 \cdot CO \cdot NH_2$ = 84.1. Colorless crystals, m.118. **di ~** See *diacetamide.* **dichloro ~ •** $CHCl_2 \cdot CO \cdot NH_2$ = 128.0. Colorless crystals, m.98, soluble in water. **hydroxy ~ •** Glycolamide. **phenyl ~ †** ***N-*** Acetanilide. **α-** Toluamide.

a. chloride $Me \cdot CCl_2 \cdot NH_2$ = 114.0, b.90. **a. nitrate** $MeCO \cdot NH_3 \cdot ONO_2$ = 122.1. Colorless crystals, formed by the action of nitric acid on a.

acetamidine• $C_2H_6N_2$ = 58.1. Ethanamidine, m.166.

acetamido• Indicating the $MeCO \cdot NH-$ radical. **a. ethylsalicylic acid** Benzacetin. **a.naphthol** $C_{12}H_{11}O_2$ = 201.2. **1,2- ~** White leaflets, m.235. **1,4- ~** White needles, m.187. **a.phenetol** Phenacetin. **a.phenol** $C_6H_4(OH) \cdot NH \cdot CO \cdot Me$ = 151.2. **1,2- ~** White leaflets, m.201. **1,3- ~** Colorless needles, m.149. **1,4- ~** Acetaminophen.

acetamino The acetamido• radical.

acetaminophen $C_6H_4(OH) \cdot NH \cdot CO \cdot Me$ = 151.2. 4-Hydroxyacetanilide, paracetamol, Liquiprin, Panadol, Tylenol. White, bitter crystals, m.171, soluble in water; an analgesic and antipyretic for moderate pain (USP, EP, BP).

acetanilide $PhNH \cdot CO \cdot Me$ = 135.2. *N*-phenylacetamide†, Antifebrin. Colorless leaflets, 114, soluble in water; formerly used as antipyretic, antirheumatic; a preservative. **aceto ~** $MeCOCH_2 \cdot CONHPh$ = 177.2. Colorless crystals, m.85. **acetyl ~** Diacetanilide. **amino ~ •** $NH_2C_6H_4 \cdot NH \cdot CO \cdot Me$ = 150.2. **para ~** Colorless crystals, m.160. **bromo ~ •** Acetbromoanilide. **di ~** $PhN(MeCO)_2$ = 177.2. Colorless leaflets, m.37. **ar-ethoxy ~** Acetophenetide. **p-ethoxy-** Phenacetin. **ar-methoxy ~** Acetaniside. **ar-methyl ~** Acetotoluide. **α-phenyl ~ α-**Toluanilide.

acetaniside $C_6H_4(OMe)NH \cdot COMe$ = 165.2. Methoxyacetanilide. ***ortho-* ~** Colorless crystals, m.80, soluble in water.

acetarsol $C_6H_3 \cdot OH \cdot (NHCOMe)AsO \cdot (OH)_2$ = 275.1. Stovarsol, acetarsone, 3-acetamido-4-hydroxyphenyl-arsonic acid. White powder, slightly soluble in water; an antiprotozoan; formerly used to treat syphilis. Cf. *carbarsone.*

acetarsone Acetarsol.

acetate Ac. A salt of acetic acid containing the CH_3COO- radical. A. are readily decomp. by strong acids or heat.

acetazolamide $C_4H_6O_3N_4S_2$ = 222.2. *N*-(5-sulfamoyl-1,3,4-thia-diazol-2-yl) acetamide. White crystals, m.258, slightly soluble in water. An inhibitor of carbonic anhydrase; a diuretic, used to treat glaucoma (USP, BP).

acetbromamide $CH_2Br \cdot CONH_2$ = 138.0. Bromoacetamide. Colorless leaflets, m.108, soluble in ether. ***N-* ~** $CH_3CONHBr$.

acetbromoanilide $BrC_6H_4NHCOCH_3$ = 214.1. ***para-* ~** Colorless needles, m.165.

acetene Ethylene•.

acetenyl Ethynyl•.

Acetest Trademark of tablet for testing for acetone in urine; contains nitroprusside.

acet extract See *extract.*

acethydrazide A compound containing the $NH_2 \cdot NH \cdot CO \cdot CH_2-$ radical. Cf. *hydrazide.*

acetic Describing compounds containing acetyl, CH_3CO-.

a. aldehyde Acetaldehyde•. **a. anhydride•.** $(MeCO)_2O$ = 102.1. Ethanoic anhydride, acetyl oxide, acetic acid anhydride. Colorless liquid, b.137, soluble in alcohol; a reagent. **a. ester, a. ether** Ethyl acetate•. **a. peracid** Peracetic acid•. **a. peroxide** $(CH_3CO)_2O_2$. An explosive derivative of a. anhydride.

acetic acid• $CH_3 \cdot COOH$ = 60.1. Ethanoic acid, ethylic acid, vinegar acid, acetone carboxylic acid (USP, NF, BP). (1) 99.5% (glacial). Clear, colorless liquid or crystalline mass miscible

ethaldehyde Hexadecanal*.
ethalic acid Palmitic acid*.
ethambutol hydrochloride $C_{10}H_{24}O_2N_2 \cdot 2HCl$ = 277.2. Myambutol. White crystals, m.201, soluble in water. An antituberculous drug used with others to prevent development of resistant strains of bacilli (BP).
ethamine *Ethyl*amine*.
ethamolin Ethanolamine.
ethanal* Acetaldehyde*. **hydroxy ~*** Glycolaldehyde*. **trichloro ~*** Chloral. **e. acid** Glyoxalic acid.
ethanamide Acetamide*.
ethanamidine Acetamidine*.
ethane* C_2H_6 = 30.07. Methylmethane, dimethyl, ethylhydride. An alkane. Colorless gas, $d_{air=1}$1.049, m.−172, b.−86, slightly soluble in water; a constituent of natural gas. The ethyl (C_2H_5-), ethylene ($-CH_2 \cdot CH_2-$), ethylidyne ($\equiv C \cdot Me$), and ethanediylidene ($=CH \cdot CH=$) radicals are derived from ethane. Unsaturated hydrocarbon derivatives include ethene* (ethylene*), $CH_2{:}CH_2$, and ethyne* (acetylene*), CH:CH. **amino ~** *Ethyl*amine*. **bromo ~***, **chloro ~***, etc. See *ethyl bromide, ethyl chloride*, etc. **dibenzyl ~** See *dibenzylethane*. **dibromo ~***, **dichloro ~***, etc. See *ethylene dibromide, ethylene dichloride*, etc. **dihydroxy ~** Glycol*. **diphenyl ~** Dibenzylethane. **hexabromo ~*** See *hexabromoethane*. **hexachloro ~*** See *hexachloroethane*. **hydroxy ~** Ethanol*. **nitro ~** See *nitroethane*. **nitroso ~** See *nitrosoethane*. **perchloro ~** Hexachloro e. **phenyl ~** Ethyl*benzene*. **triethoxy ~*** Ethylidyne triethyl ether.
e.dial* Glyoxal*. **e.diamide** Oxamide*. **e.diamine*** Ethylenediamine*. **e.dinitrile*** Cyanogen. **e.dioic acid*** Oxalic acid*. **e.diol*** Glycol*. **e.dioyl** The oxalyl* radical. **e.dioyl chloride** Oxalyl dichloride*. **e.dithiol*** Dithioglycol. **1,2-e.diyl†** See *ethylene (2)*. **e.nitrile*** Acetonitrile*. **e.sulfonic acid*** Ethyl*sulfonic acid*. **e.sulfinic acid*** Ethyl*sulfinic acid*. **e.thial*** Sulfaldehyde. **e.thiol*** EtSH = 62.1. Ethyl mercaptan, ethyl hydrosulfide*. Colorless liquid, b.37, slightly soluble in water; an odorous constituent of feces. **e. thioamide** Thioacetamide*. **e.thiolic acid** Thioacetic acid*.
ethanediylidene* The radical $=CH \cdot CH=$.
ethanite A synthetic rubber, prepared by subjecting natural gas to a heating and cooling process.
ethano-* Prefix indicating a $-CH_2 \cdot CH_2-$ bridge.
Ethanograph See *breath alcohol*.
ethanoic acid* Acetic acid*. **dihydroxy ~** Glyoxylic acid*. **e.a. anhydride** Acetic anhydride*.
ethanol* C_2H_6O = 46.07. Ethyl alcohol*, alcohol, spirit, spirit of wine, grain alcohol, absolute alcohol, ethyl hydrate, etc. (1) Et·OH. Absolute alcohol, dehydrated alcohol. Colorless liquid, d_4^{25}0.78505, m.−117.3, b.78.3, miscible with water or ether; a reagent and solvent. (2) 99% alcohol and lower concentrations. Used extensively for tinctures and pharmaceutical preparations, as a solvent and preservative, as an antiseptic, and in perfumery (USP, BP). (3) Grain alcohol, cologne spirits. Colorless liquid (ethanol 90, water 10%). (4) Diluted alcohol, proof spirit. Colorless liquid, ethanol about 49, water 51% (by weight). (5) Denatured alcohol. Alcohol made unpotable by the addition of substances such as methanol, pyridine, formaldehyde, or other denaturant. Used in industry, the arts and commerce, principally as a solvent or fuel. See also *methylated spirit*. **amino ~*** Colamine. **butoxy ~*** Butyl *Cellosolve*. **chloro ~*** Ethylene chlorohydrin. **cyano ~** Ethylene cyanohydrin. **ethoxy ~*** Cellosolve. **imino ~** See *iminoethanol*. **oxybis ~** Diethylene glycol. **phenyl ~** See *phenylethanol*. **tribromo ~*** See *tribromoethanol*. **trichloro ~*** See *trichloroethanol*. **trimethyl ~** *tert*-Butyl methanol.
ethanolamine $NH_2(CH_2)_2 \cdot OH$ = 61.1. 2-Aminoethanol*, β-hydroxyethylamine, monoethanolamine. Colorless liquid, d.1.04, b_{150mm}171, soluble in gasoline; used for injections and sclerosing (BP), and for dry cleaning. **di ~** See *diethanolamine*. **tri ~** See *triethanolamine*.
ethanolate* Ethylate, ethoxide. A compound derived from ethanol by replacing the OH group hydrogen by a monovalent metal (M); as, MOEt.
ethanoyl The acetyl* radical.
ethene* C_2H_4 = 28.05. (1)* *Ethylene*, q.v. olefiant gas. Colorless, flammable gas of peculiar odor, $d_{air=1}$0.978, b.−103, slightly soluble in water. From ethene the radicals vinyl, $-CH{:}CH_2$, and vinylene, $-CH{:}CH-$, are derived. An important intermediate for polyethylene, polystyrene, PVC, SBR, and polyester. (2) The radical ethylene*. **1,2-e.diyl†** See *vinylene*. **e. series** Alkenes*, olefins. The homologs of ethene; a group of *aliphatic hydrocarbons*, q.v., C_nH_{2n}.
ethenium The organic cation $MeCH_2^+$.
etheno-* Prefix indicating a $-CH{:}CH-$ bridge. Cf. *ethano-*.
ethenol* Vinyl alcohol*.
ethenone* Ketene*.
ethenyl (1) The ethylidyne* radical. (2)† The vinyl* radical.
ethenylidene† The vinylidene* radical, $=CH{:}CH_2$.
ether (1)* See *ethers*. (2)* $C_4H_{10}O$ = 74.1. Ethylic ether, ethyl oxide, ethoxyethane, diethyl ether*, sulfuric ether. Colorless liquid, d.0.720, b.35, slightly soluble in water, miscible with alcohol. A reagent and solvent for fats, resins, alkaloids, and an anesthetic (USP, BP). (3) Physics: (A)ether. A hypothetical, all-pervading medium of the universe; once believed the source of radiation, light, heat, and electricity. Cf. *etheron*. **acetic ~** Ethyl acetate*. **aldehyde ~** Croton aldehyde*. **allyl ethyl ~*** $EtOCH_2CH{:}CH_2$ = 86.1. 3-Ethoxypropylene. Colorless liquid, b.66, insoluble in water. **anesthetic ~** Ether (2). **anhydrous ~** Ethyl ether which has been distilled over sodium; a reagent and solvent. **butyl ethyl ~*** BuOEt = 102.2. Colorless liquid, b.92, insoluble in water. **decachloro ~** Perchloro ether. **dichloro ~** Dichloroethyl ether. **diethyl ~*** Ether (2). **dihexadecyl ~*** $(C_{16}H_{33})_2O$ = 466.9. Cetyl ether. White leaflets, m.55, soluble in water. **dimethyl ~*** See *methyl ether* under *methyl*. **ethyl heptyl ~*** $C_7H_{15}OEt$ = 144.3. Oenanthic ether. Colorless oil, d.0.840, b.143, insoluble in water; used in flavoring extracts and in organic synthesis. **formic ~** Ethyl formate*. **hydrobromic ~** Ethyl bromide*. **hydrochloric ~** Ethyl chloride*. **hydrocyanic ~** Ethyl cyanide*. **hydroiodic ~** Ethyl iodide*. **isopropyl ~** See *propyl ether*. **methyl ~** See *methyl ether*. **methyl *n*-naphthyl ~*** $MeOC_{10}H_7$ = 158.2. Methoxynaphthalene. **~ 1- naphthyl ~** b.265. **~ 2- naphthyl ~** Jara-jara. m.72; used in perfumes. **methyl pentyl ~*** $MeOC_5H_{11}$ = 102.2. b. 92. **petroleum ~** See *petroleum ether*. **sulfuric ~** Ether (2).
e. acid An acid *ester*, q.v. **e. alcohol** A compound of the type $R \cdot O \cdot R \cdot OH$; as, the diether of a dihydric alcohol. **e. of crystallization** The molecules of e. as a component part in a crystal lattice.
ethereal Resembling or made with ether. **e. fruit oil** See *ethereal fruit oil* under *oil*. **e. liquid** A highly volatile liquid. **e. oil** Essential oil. **e. salt** Ester.
etherene Ethylene*.
etheric acid Acetoacetic acid*.
etheride A compound containing the radical $-COX$; X is a halogen.
etherification The process of making an ether from an alcohol. Cf. *ethers*.

Colorless prisms, m.98, soluble in water. **e. succinyl succinate*** $C_{12}H_{16}O_6$ = 256.3. Green prisms, soluble in water (blue fluorescence). **e. sulfas** E. sulfate. **e. sulfate** Et_2SO_4 = 154.2. Normal e. sulfate, diethyl sulfate*. Colorless oil with peppermint odor, d.1.184, b.208, insoluble in water. **acid ~, mono ~** E. hydrogensulfate*. **e.sulfinic acid** Et·SO·OH = 94.1. Ethanesulfinic acid*. Colorless syrup, an isolog of propionic acid. **e. sulfite** Diethyl sulfite. **e. sulfohydrate** Ethanethiol*. **e. sulfone** Diethyl sulfone*. **e.sulfonic acid** $EtSO_2$·OH = 110.1. Ethanesulfonic acid*. Colorless, deliquescent crystals, soluble in water. **e.sulfonic chloride** $EtSO_2Cl$ = 128.6. Ethanesulfonyl chloride. Colorless liquid, b.177, decomp. by water. **e.sulfonic oxide** Diethyl sulfoxide. **e. tartrate** $EtOOC(CHOH)_2COOEt$ = 206.2. E. racemate, diethyl tartrate*. Colorless liquid, b.280, slightly soluble in water; a solvent for nitrocellulose, gums and resins. **e.tartronic acid*** $C_5H_8O_5$ = 148.1. Colorless scales, m.116 (decomp.), soluble in water. **e. telluride** Et_2Te = 185.7. Tellurium ethyl. A heavy, red oil, giving off yellow fumes. **e. ditelluride** Et_2Te_2 = 313.3. Diethyl ditelluride*, e. pertelluride. A dark-red liquid decomp. by water. **e. terephthalate** $C_6H_4(COOEt)_2$ = 222.2. E. *p*-phthalate. Colorless liquid, b.119, insoluble in water. **e. thioalcohol** Ethanethiol*. **e. thiocarbonate** (1) $CS(EtO)_2$ = 134.2. A liquid, d.1.028, b.162. (2) $(EtS)_2CS$ = 166.3. Yellow oil of unpleasant odor; isolog of e. carbonate and e. sulfite. **e. thiocyanate*** EtSCN = 87.1. E. sulfocyanide. Colorless liquid, b.148, insoluble in water. **e. iso ~** EtNCS = 87.1. E. mustard oil. Colorless liquid, b_{753mm}131, insoluble in water. **e.tin tribromide*** $EtSnBr_3$ = 387.5. Colorless needles, m.310, soluble in water. **e. toluate*** MeC_6H_4COOEt = 164.2. **e. ortho- ~** Colorless liquid, b.221, insoluble in water. **e. meta- ~** Colorless liquid, b.228, insoluble in water. **e. para- ~** Colorless liquid, b.229, insoluble in water. **e.toluene** E. methyl*benzene*. **e.urethane** See *ethylurethane* under *urethane*. **e. valerate** BuCOOEt = 130.2. Colorless liquid, b.145, insoluble in water. **e. vanillate*** $C_{10}H_{12}O_4$ = 196.15. Colorless crystals, m.44, insoluble in water. **e. vanillin** See *ethyl vanillin* under *vanillin*. **e. vinyl ether*** EtO·C_2H_3 = 72.1. Colorless liquid, b.36, soluble in water. **e. violet** An indicator changing at pH 2.0 from blue-green (acid) to purple (alkali). **e. xylene** Ethyldimethyl*benzene*.

ethylal Acetaldehyde*.

ethylamine* See *ethylamine* under *ethyl*.

ethylate Ethanolate*.

ethylation The introduction of an ethyl group into a compound.

ethylene (1)* Ethene*, q.v. (2)* 1,2-Ethanediyl†, acetene, elayl. The radical $-CH_2·CH_2-$. Cf. *ethylidene*. **azi ~** Diazoethane. **bromo ~** Vinyl bromide*. **chloro ~** Vinyl chloride*. **di ~** See *diethylene*. **dichloro ~*** ClHC:CHCl = 96.6. Acetylene dichloride, dioform. ***cis*- ~** b.48. ***trans*- ~** b.60. Colorless liquids, immiscible with water. **diethyl ~** 3-Hexene*. **dimethyl ~** 2-Butene*. **diphenyl ~** Stilbene*. **oxo ~** Ketene*. **pentyl ~** Heptene*. **perchloro ~** See *tetrachloroethylene*. **phen ~, phenyl ~** Styrene*. **poly(chlorotrifluoro ~)** See *poly(chlorotrifluoroethylene)*. **tetrachloro ~*** See *tetrachloroethylene*. **tetraiodo ~*** Diiodoform. **tetraphenyl ~*** See *tetraphenylethylene* under *tetraphenyl*. **trimethyl ~** See *trimethylethylene* under *trimethyl*. **vinyl ~** 1,3-Butadiene*.

e. acetate E. diacetate*. **e. alcohol** Glycol*. **e. aldehyde** Acrylaldehyde*. **e. benzoate** Ph·COO·CH_2:CH_2·OOC·Ph = 270.3. Colorless prisms, m.73, insoluble in water. **e. bromide** E. dibromide*. **e. bromohydrin** Glycol bromohydrin. **e.carboxylic acid** Acrylic acid*. **e. chlorohydrin** $ClCH_2·CH_2OH$ = 80.5. Chloroethyl alcohol, 2-chloroethanol*, 1-hydroxy-2-chloroethane. Colorless liquid, b.128, miscible with water. Used in organic synthesis, and in forcing the sprouting of plants. **commercial ~** A 40% solution, d.1.097, b.96, used to introduce the OEt group into a molecule. **e. chloride** E. dichloride*. **e. cyanohydrin** C_3H_5ON = 71.1. 2-Cyanoethanol*, 1-hydroxy-2-cyanoethane. Colorless liquid, m.221, miscible with water. **e. cyanide** E. dicyanide*. **e. diacetate*** $(MeCOOCH_2)_2$ = 146.1. Colorless liquid, b.186, soluble in water. **e.diamine*** $NH_2CH_2·CH_2NH_2$ = 60.1. Diaminoethane, 1,2-ethanediamine*, in ptomaines. Colorless crystals, m.10, soluble in water. Cf. *sublamine*. **e. hydrate** Colorless liquid with an ammoniacal odor; used for aminophylline injections (USP, BP). **e.tetraacetic acid** $(CH_2·COOH)_2(N·CH_2)_2(CH_2·COOH)_2$ = 292.3. EDTA, versenic acid. White crystals, slightly soluble in water, decomp. above 160; made from an alkali cyanide, formaldehyde, and ethylenediamine. It forms slightly ionized complexes with alkaline earths and other elements. Used as the more soluble sodium salt, as an analytical reagent, e.g., to titrate the hardness salts of water with Eriochrome Black T as indicator; also in detergents, rubber processing, and scale prevention. Cf. *sequestering agent*. See disodium *edetate*. **e. dibenzamide** See *ethylene dibenzamide* under *dibenzamide*. **e. dibromide*** $BrCH_2·CH_2Br$ = 187.9. 1,2-Dibromoethane*, e. bromide, glycol dibromide. **e. dicarbonitrile** E. dicyanide*. **e.dicarboxylic acid *cis*- ~** Maleic acid*. ***trans*- ~** Fumaric acid*. **e. dichloride*** $ClCH_2·CH_2Cl$ = 99.0. 1,2-Dichloroethane*, e. chloride, elayl chloride, vinylene chloride, Dutch liquid. Colorless liquid, b.84, slightly soluble in water. Used in organic synthesis, as a solvent for lacquers and fats, and as a textile cleanser. Cf. *dichloroethylene*. **e. dicyanide*** $C_4H_4N_2$ = 80.1. Succinonitrile*, e. cyanide, 1,2-dicyanoethane*. Colorless crystals, m.54, soluble in water. **e. diethanolate** EtO·CH_2CH_2OEt = 118.2. Diethyl glycol ether. **e. dihydrate** Glycol*. **e. diiodide*** $(CH_2I)_2$ = 281.9. Diiodoform, e. iodide, 1,2-diiodoethane*. Yellow prisms, m. 81, slightly soluble in water. **e. dinitrate** $(CN_2NO_3)_2$ = 152.1. EGDN, e. nitrate. Yellow liquid, exploded by heat or impact, insoluble in water. **e. dinitrite** $(CH_2NO_2)_2$ = 120.1. Glycol dinitrite. Colorless liquid, b.96, insoluble in water. **e. dioxide** Dioxane. **e.dioxy*** The radical $-OCH_2·CH_2O-$. **e. diphenolate** E. diphenyl ether. **e. diphenyldiamine** $C_{14}H_{16}N_2$ = 212.3. Colorless crystals, m.59, insoluble in water. **e. diphenyl ether** $C_{14}H_{14}O_2$ = 214.3. E. diphenolate. Colorless crystals, m.98, sparingly soluble in water. **e. dithiol*** HS·$CH_2·CH_2$·SH = 94.2. Glycol sulfohydrate, e. disulfhydrate, dithioethylene glycol. Colorless liquid, b.146, soluble in alcohol. **e. disulfhydrate** E. dithiol*. **e.disulfonic acid** Ethionic acid. **e. glycol*** Glycol*. **e. g. dinitrate** E. dinitrate. **e. g. ethyl ether** Cellosolve. **e. hydride** Ethane*. **e. monoacetate** Glycol acetate. b.187. **e. naphthalene** Acenaphthylene*. **e. oxide*** $(CH_2)_2$:O = 44.5. Oxirane*, dimethylene oxide, 1,2-epoxyethane*. Colorless gas, b_{746mm}14, soluble in water. E. oxide is used to make e. glycol and thence Terylene. **e. perchloride** Carbon dichloride*. **e. periodide** Diiodoform. **e. series** See *olefin*. **e. sulfate acid ~** $C_2H_4(HSO_4)_2$ = 222.2. E. sulfuric acid. A colorless syrup. **basic ~** $(OH)C_2H_4(HSO_4)$ = 142.1. E. hydroxysulfuric acid; known only as its compounds. **e. sulfide** $CH_2·S·CH_2$ = 60.1. Thiirane, dimethylene sulfide. Liquid, b.55, polymerizes rapidly. **e.sulfonic acid** Ethionic acid. **e. sulfuric acid** See *e. sulfate* above. **e. tetrabromide*** Tetrabromoethane*.